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TITLE: Decorative plywood manufacture useful especially for  
flooring - by  
adhering thin decorative veneer to plywood substrate using  
synthetic adhesive  
film, useful for preventing peeling or surface cracking

PATENT-ASSIGNEE: TAWARA K[TAWAI]

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BASIC-ABSTRACT: The decorative plywood manufacture comprises  
adhering thin  
decorative veneer to plywood substrate by synthetic adhesive film  
which  
comprises paper impregnated by adhesives.

The fibre direction of decorative veneer is perpendicular to that  
of the  
adhesive paper.

USE - Used for flooring.

ADVANTAGE - The decorative plywood is free from occurrence of

peeling off and  
surface cracks of decorative veneer.

CHOSEN-DRAWING: Dwg.3/6

TITLE-TERMS:

DECORATE PLYWOOD MANUFACTURE USEFUL FLOOR ADHERE THIN DECORATE  
VENEER PLYWOOD  
SUBSTRATE SYNTHETIC ADHESIVE FILM USEFUL PREVENT PEEL SURFACE  
CRACK

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(71) 出願人 395016800

田原 捷宏

大阪府藤井寺市北岡2丁目12-27

(72) 発明者 吉田 武夫

福岡県北九州市八幡西区光明一丁目7番9号

(72) 発明者 田原 捷宏

大阪府藤井寺市北岡2丁目12-27

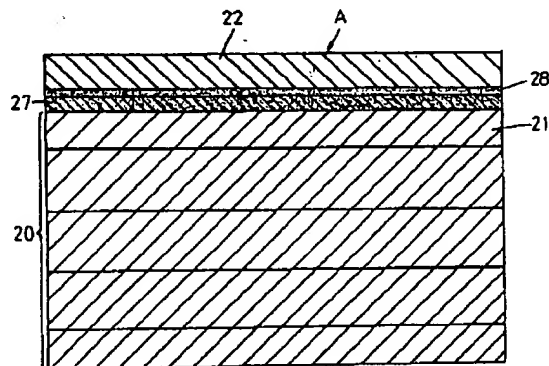
(74) 代理人 弁理士 山下 賢二

(54) 【発明の名称】 化粧貼り合板とその製造法

(57) 【要約】

【課題】化粧単板の剥離や表面割れなどを生じない化粧貼り合板を提供する。

【解決手段】紙(23)とその全体に含浸された合成樹脂系の接着剤(24)とから成る合成樹脂接着膜(27)を介して、薄づき化粧単板(22)を台板合板(20)の表面へ、その繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け一体化した。



## 【特許請求の範囲】

【請求項1】紙(23)とその全体に含浸された合成樹脂系の接着剤(24)とから成る合成樹脂接着膜(27)を介して、薄づき化粧単板(22)を台板合板(20)の表面へ、その繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け一体化したことを特徴とする化粧貼り合板。

【請求項2】化粧単板(22)の表面に浸み出さない同系の化粧単板貼り付け用接着剤(28)を、合成樹脂接着膜(27)の表面に塗布したことを特徴とする請求項1記載の化粧貼り合板。

【請求項3】台板合板(20)の表面に紙貼り付け用の合成樹脂系第1接着剤(24)を塗布して、その上方から紙(23)を貼り付け圧着することにより、その紙(23)の全体に上記第1接着剤(24)が含浸された合成樹脂接着膜(27)を形成した後、その合成樹脂接着膜(27)の表面に化粧単板貼り付け用の合成樹脂系第2接着剤(28)を塗布して、その上方から薄づき化粧単板(22)をその繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け熱圧することを特徴とする化粧貼り合板の製造法。

【請求項4】第1接着剤(24)と第2接着剤(28)との何れも熱可塑性接着剤と熱硬化性接着剤との混合物とし、しかもその混合比率を第1接着剤(24)では熱硬化性接着剤を多く、第2接着剤(28)では逆に熱可塑性接着剤を多く、各々調製することを特徴とする請求項3記載の化粧貼り合板の製造法。

## 【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は各種の建材や家具材などに有用な化粧貼り合板とその製造法に関する。

【0002】

【従来の技術】天然塗理の美的効果を活かした薄づき化粧単板を、台板合板の表面に接着一体化した化粧貼り合板としては、既に市販されているフローリングが典型例であるが、その従来品は図4のような工程を経て製造されている。

【0003】即ち、先ず第1工程(i)として、台板合板(10)の表面に合成樹脂系の第1接着剤(11)を塗布し、その上方から紙(12)を圧着ロール(13)又は平板プレスによって貼り付け、その後別個独立する第2工程(ii)において、上記紙(12)の表面に合成樹脂系の第2接着剤(14)を塗布し、その上方から薄づき化粧単板(15)をホットプレス(16)によって貼り付け一体化している。

【0004】

【発明が解決しようとする課題】ところが、従来の上記製造法では第1接着剤(11)を多量に塗布すると、これが台板合板(10)に対する紙(12)の貼り付け圧

着時に、その紙(12)を透過して上方へ浸み出し、圧着ロール(13)又は平板プレスの表面に付着して、これを汚損してしまうことになるため、その塗布量を少なく規定せざるを得ず、そうすると第1接着剤(11)が紙(12)の裏面一部だけにしか含浸されない結果となる。

【0005】そこで、その第1接着剤(11)による化粧単板(15)の接着強度を補償する必要上、上記第2接着剤(14)を多量に塗布すると、これが紙(12)に対する化粧単板(15)の貼り付け熱圧時に、その薄肉な化粧単板(15)の導管などを透過して上方へ浸み出し、引き続き化粧単板(15)に着色塗料の表面塗装を行なう際、その浸み出した接着剤(14)が着色塗料の定着を阻害し、着色ムラを生ずることになるため、その第2接着剤(14)の塗布量も少なく調整せざるを得ず、そうすると第2接着剤(14)が上記紙(12)の表面一部だけにしか含浸されない結果となる。

【0006】つまり、従来品の完成状態を示した図5の拡大断面図から明白なように、上記紙(12)はその表面と裏面との局部的に第1、2接着剤(11)(14)を含浸した状態となるに過ぎず、その中間が両接着剤(11)(14)を隔離させる如く、原紙状態のままに残存するのである。

【0007】その結果、製品としての使用中、経時的な湿度の変化により、上記紙(12)が膨張と収縮を繰り返す、その原紙状態にある中間部分から化粧単板(15)が層間剥離を生じやすくなり、耐久強度を維持することができない。

【0008】上記着色ムラの発生を防止する対策としては、その第2接着剤(14)に着色を施す方法もあるが、これでは化粧単板(15)の色調が相違変化する毎に、これに応じた各種着色の調製を行なわなければならないので、著しく煩雑であり、量産性や汎用性に劣る。

【0009】又、従来の上記製造法では図6の分解状態から示唆される通り、紙(12)の繊維方向と化粧単板(15)の繊維方向とが、言わば平行する順応状態に貼り付けられているため、やはり使用中の経時変化によって、その繊維方向に沿う化粧単板(15)の表面割れを生じやすく、このことには上記第2接着剤(14)の塗布量を少なくせざるを得ないことも関係する。

【0010】更に、従来の上記製造法では台板合板(10)に紙(12)を貼り付ける第1工程(i)と、その紙(12)に化粧単板(15)を貼り付ける第2工程(ii)とが、製造ライン又は機械として分離独立しているため、短時間での効率良く化粧貼り合板を量産することができず、上記第1工程(i)での第1接着剤(11)が乾燥硬化しない限り、第2工程(ii)における化粧単板(15)の貼り付け作業を行なうことができない。

【0011】尚、特殊・高級な化粧貼り合板の場合、上

記紙(12)を手貼り作業する方法もあり得るが、これでは紙(12)の皺寄りを生ずるおそれがあり、その皺取り後でなければ、やはり化粧単板(15)の貼り付け作業を行なえないため、上記と同様に作業能率を向上できない問題がある。

#### 【0012】

【課題を解決するための手段】本発明はこのような課題の改良を企図しており、そのために化粧貼り合板として、紙とその全体に含浸された合成樹脂系の接着剤とから成る合成樹脂接着膜を介して、薄づき化粧単板を台板合板の表面へ、その繊維方向が上記紙の繊維方向とクロスする関係状態に貼り付け一体化したことを特徴とし、

【0013】又、上記化粧貼り合板の製造法として、台板合板の表面に紙貼り付け用の合成樹脂系第1接着剤を塗布して、その上方から紙を貼り付け圧着することにより、その紙の全体に上記第1接着剤が含浸された合成樹脂接着膜を形成した後、その合成樹脂接着膜の表面に化粧単板貼り付け用の合成樹脂系第2接着剤を塗布して、その上方から薄づき化粧単板をその繊維方向が上記紙の繊維方向とクロスする関係状態に貼り付け熱圧することを特徴とするものである。

#### 【0014】

【発明の実施の形態】以下、図面に基いて本発明の詳細を説明すると、その化粧貼り合板(A)の分解状態を表わした図1において、(20)は台板合板であり、5プライの普通合板(ラワン合板)を例示している。(x-x)はその表単板(21)の繊維(奎理)方向、(22)は薄づき化粧単板、(y-y)はその表面の繊維(奎理)方向、(23)は上記化粧単板(22)と台板合板(20)との上下相互間に介挿されて、後述の接着剤を含浸し得る性状の紙、(z-z)はその紙(23)の繊維方向を示唆している。

【0015】上記化粧貼り合板(A)を製造するに当っては、図2の紙貼り付け工程(I)と化粧単板貼り付け工程(II)とを、台板合板(20)の一貫搬送ラインとして並列設置し、その台板合板(20)の表面に先ず紙貼り付け用の第1接着剤(24)を、これが追って紙(23)の全体に含浸され得る必要量として、塗布ロール(図示省略)などの使用により塗布する。

【0016】茲に第1接着剤(24)としては、紙(23)に浸透して、その紙(23)を台板合板(20)に貼り付け得る液体の合成樹脂系接着剤であれば足りるが、酢酸ビニル樹脂エマルジョンなどの熱可塑性接着剤と、ユリア樹脂などの熱硬化性接着剤とを一定比率のもとに混合したものが好ましい。しかも、その熱硬化性接着剤を熱可塑性接着剤に比して多く混合調製したものが、最適であると言える。蓋し、紙(23)への浸透性と耐水接着力を高めることができるからである。

【0017】上記第1接着剤(24)が塗布された台板合板(20)に、次いで上方から紙(23)を貼り付け、

圧着する。その紙(23)としては枚葉形態を用いて、これを平板プレスにより貼り付け圧着してもさしつかえないが、図2のようなロール形態の紙(23)を採用して、これを繰り出しロール(25)から皺寄りなく繰り出し乍ら、回転圧着ロール(26)により貼り付け圧着することが望ましい。

【0018】そして、上記第1接着剤(24)の浸透性と回転圧着ロール(26)の強制的な圧着力とにより、その第1接着剤(24)を紙(23)の全体に万遍なく含浸させ、その紙(23)が原紙状態のままに残存しない混然一体の合成樹脂接着膜(27)を形成するのである。

【0019】その際、上記第1接着剤(24)は紙(23)を透過して上方へ浸み出し、回転圧着ロール(26)の表面に付着することとなる関係上、図示省略してあるが、その浸み出し付着した接着剤(24)を掻き取り洗浄するためのドクターブレードやそのパイプレーター、洗浄液のスプレーノズルなどを、上記回転圧着ロール(26)の表面に臨ませる。

【0020】このような掻き取り洗浄機器の付属設置により、上記第1接着剤(24)の塗布量につき精密な調整が不要となり、これを多い目として容易に台板合板(20)の表面へ塗布することができ、しかも紙(23)の全体に含浸させて、上記合成樹脂接着膜(27)を確固に安定良く形成し得ることとなる。

【0021】そして、上記貼り付け圧着後にはその紙(23)を台板合板(20)の大きさに応じて、定寸にカットするのである。このことは、初回の台板合板(20)に第1接着剤(24)を介して、ロール形態にある紙(23)の切り離し始端部を貼り付けた上、その台板合板(20)を順次自動間歇的に搬送する過程において、これと連動して昇降するカッター(図示省略)により、支障なくカットすることができる。

【0022】そこで、次に化粧単板(22)を貼り付けるため、上記紙(23)の表面に第2接着剤(28)をやはり塗布ロールなどの使用によって塗布するが、その塗布量は上記第1接着剤(24)のそれに比して少なく設定することができる。蓋し、そのベースとなる上記合成樹脂接着膜(27)が、既に形成されているからである。

【0023】その化粧単板貼り付け用の第2接着剤(28)としても上記第1接着剤(24)と同じく、酢酸ビニル樹脂エマルジョンなどの熱可塑性接着剤と、ユリア樹脂などの熱硬化性接着剤とを一定比率のもとに混合したものが好適である。そうすれば、これを第1接着剤(24)が乾燥硬化しない間に塗布することにより、その上記合成樹脂接着膜(27)との親和状態に一体化させることができるからである。

【0024】但し、その場合上記第1接着剤(24)との逆に、熱可塑性接着剤を熱硬化性接着剤に比して多く

混合調製することにより、化粧単板(22)への浸透性を抑制することが、最も効果的である。化粧単板(22)への着色塗料による表面塗装を適正に行なえ、その着色ムラなども防止し得るからである。

【0025】上記第2接着剤(28)も塗布された台板合板(20)に対して、最後に上方から化粧単板(22)をホットプレス(29)により貼り付け熱圧する。しかも、その際には図1から示唆される通り、化粧単板(22)の繊維(空理)方向(y-y)を、上記紙(23)の繊維方向(z-z)とクロス貼り状態に積層させる。

【0026】つまり、上記ロール形態の紙(23)はその繰出し長手方向に順応延在する繊維を備えるため、上記化粧単板(22)をその繊維(空理)方向(y-y)が紙(23)の繊維方向(z-z)と直交する関係状態に貼り付け一体化するのである。そうすれば、上記紙(23)とその全体に含浸された第1接着剤(24)とから成る合成樹脂接着膜(27)が、その化粧単板(22)の表面割れに対する効果的な対抗強度を発揮することとなる。

【0027】この点、図1では台板合板(20)における表単板(21)の繊維(空理)方向(x-x)と、化粧単板(22)の繊維(空理)方向(y-y)とを平行貼り状態に設定しているが、上記趣旨を達成できる限り、化粧単板(22)の繊維方向(y-y)と表単板(21)の繊維方向(x-x)とをクロス貼り状態に配列させてもさしつかえない。

【0028】上記のように製造された化粧貼り合板(A)は図3の拡大断面図に示す通り、その化粧単板(22)と台板合板(20)との上下相互間に介在する合成樹脂接着膜(27)が、紙(23)とその全体に含浸された第1接着剤(24)とから成り、原紙状態のままに残存しないため、使用中の経時的な湿度変化に影響されず、化粧単板(22)の層間剥離を生ずるおそれがない。

【0029】しかも、その紙(23)の繊維方向(z-z)と化粧単板(22)の繊維(空理)方向(y-y)とは、クロス貼り状態にある関係上、その上記合成樹脂接着膜(27)として化粧単板(22)の表面割れに対しても優れた対抗強度を発揮し、化粧単板(22)の本来的な美的効果を永く維持し得ることになる。そのため、本発明の化粧貼り合板(A)をフローリングのほか、天井板や壁板などの各種建材、家具材、その他の用途に広く使うことができる。

【0030】

【発明の効果】以上のように、本発明の化粧貼り合板(A)は紙(23)とその全体に含浸された合成樹脂系の接着剤(24)とから成る合成樹脂接着膜(27)を介して、薄づき化粧単板(22)を台板合板(20)の表面へ、その繊維方向(y-y)が上記紙(23)の繊維

維方向(z-z)とクロスする関係状態に貼り付け一体化してあるため、冒頭に述べた従来技術の課題を確実に改良できる効果がある。

【0031】即ち、薄づき化粧単板(22)と台板合板(20)との上下相互間に、紙(23)とその全体に含浸された合成樹脂系の接着剤(24)とから成る合成樹脂接着膜(27)が介在しており、その紙(23)が図5の従来品として示した紙(12)のように、中間部での原紙状態に残存しないため、使用中の経時的な温度変化に全然影響されず、その化粧単板(22)が台板合板(20)から層間剥離するおそれがない。その結果、耐久強度と安定性に優れた化粧貼り合板(A)として、各種用途に使えるのである。

【0032】しかも、上記合成樹脂接着膜(27)を形成する紙(23)の繊維方向(z-z)と、化粧単板(22)の繊維方向(y-y)とがクロスする関係にあり、その状態において化粧単板(22)が台板合板(20)に貼り付け一体化されているため、その化粧単板(22)の表面割れに対して上記接着膜(27)が優れた対抗強度を発揮し、化粧貼り合板(A)としての本来的な美的効果も達成できるのである。

【0033】又、本発明では上記化粧貼り合板(A)の製造法として、台板合板(20)の表面に紙貼り付け用の合成樹脂系第1接着剤(24)を塗布して、その上方から紙(23)を貼り付け圧着することにより、その紙(23)の全体に上記第1接着剤(24)が含浸された合成樹脂接着膜(27)を形成した後、その合成樹脂接着膜(27)の表面に化粧単板貼り付け用の合成樹脂系第2接着剤(28)を塗布して、その上方から薄づき化粧単板(22)をその繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け熱圧するようになっているため、台板合板(20)を搬送ラインに沿い自動間歇的に搬送する過程において、その表面に対する紙(23)の貼り付けと、引き続く化粧単板(22)の貼り付けとを短時間で効率良く行なえ、量産効果を最大限に発揮させることができる。

【0034】殊更、請求項4の構成を採用するならば、紙(23)の全体に対する第1接着剤(24)の浸透性を高めることができ、その混然一体化した合成樹脂接着膜(27)を容易・確実に形成し得る効果がある。

【0035】他方、第2接着剤(28)は上記第1接着剤(24)と同じ合成樹脂系の接着剤として、相互の親和状態に一体化しつつも、化粧単板(22)の表面から浸み出すようなおそれがなく、延いてはその化粧単板(22)の表面塗装も適正に行なえ、優れた美的効果の化粧貼り合板(A)を容易に得られることとなる。

【図面の簡単な説明】

【図1】本発明に係る化粧貼り合板の分解状態を示す斜断面図である。

【図2】同じく化粧貼り合板の製造工程を示す説明図で

ある。

【図3】化粧貼り合板の完成状態を示す拡大断面図である。

【図4】従来品の製造工程を示す説明図である。

【図5】従来品の完成状態を示す拡大断面図である。

【図6】従来品の分解状態を示す斜面図である。

【符号の説明】

(20)・台板合板

(22)・化粧単板

(23)・紙

(24)・第1接着剤

(25)・紙繰り出しロール

(26)・圧着ロール

(27)・合成樹脂接着膜

(28)・第2接着剤

(29)・ホットプレス

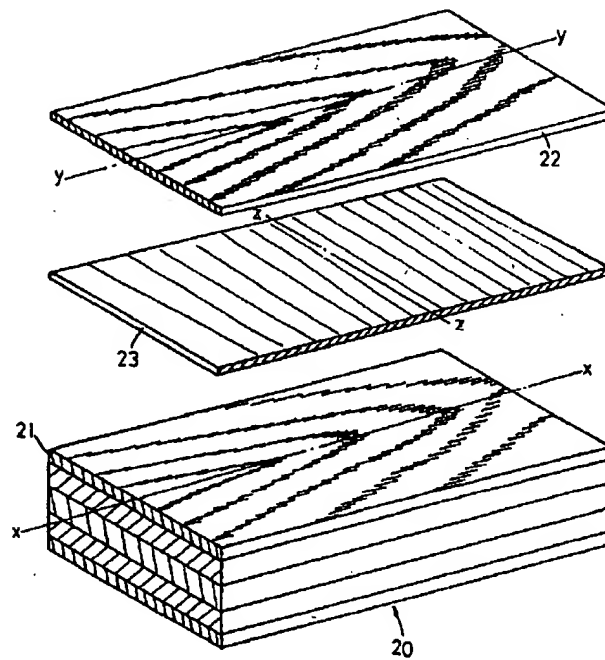
(x-x)・表単板の繊維方向

(y-y)・化粧単板の繊維方向

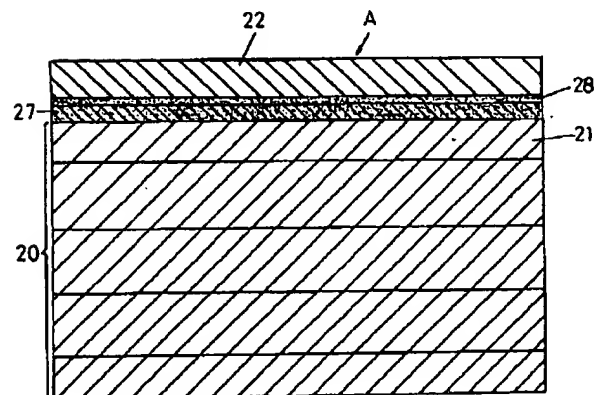
(z-z)・紙の繊維方向

10

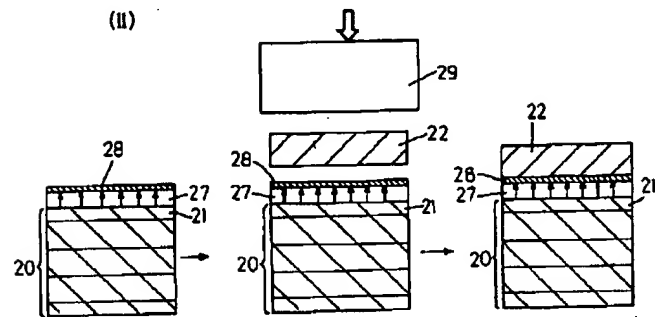
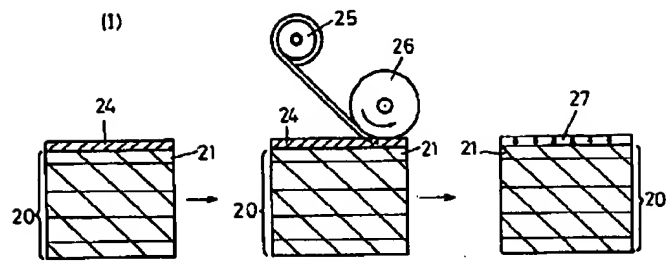
【図1】



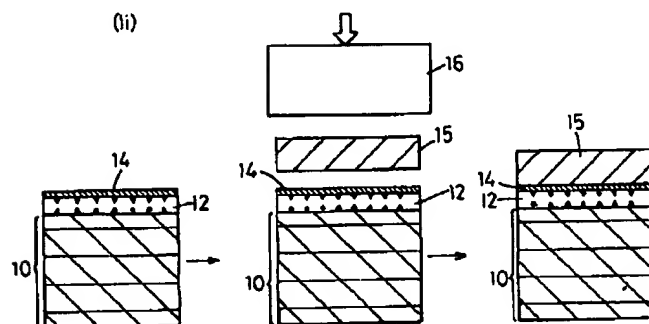
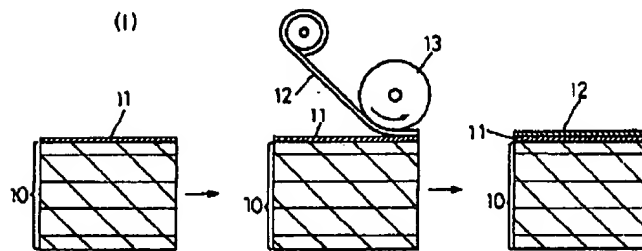
【図3】



【図2】



【図4】

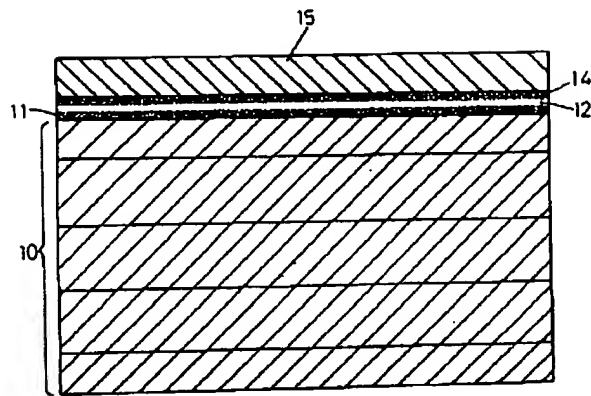




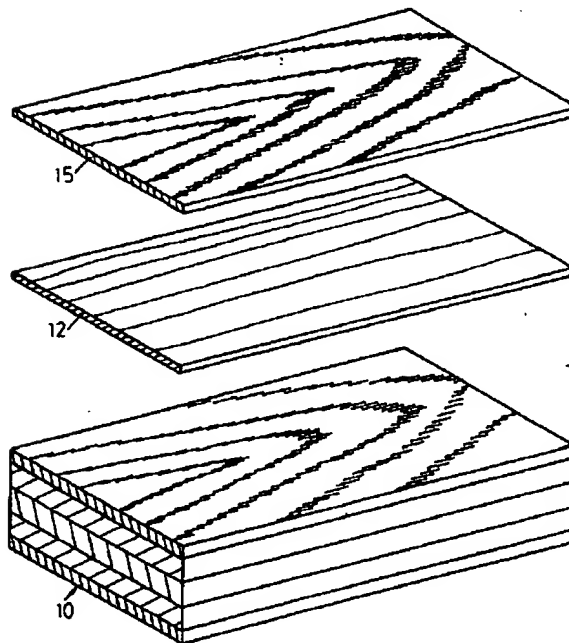
(7)

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【図5】



【図6】



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of the same synthetic-resin system -- \*\*\*\*\* from the front face of the makeup veneer (22) -- it needs --

2. \*\*\*\* shows the word which can not be translated.

3. In the drawings, any words are not translated.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to a useful makeup \*\*\*\* plywood and its manufacturing method at various kinds of building materials, furniture material, etc.

[0002]

[Description of the Prior Art] As a makeup \*\*\*\* plywood which carried out the adhesion unification of the \*\* companion makeup veneer which harnessed the esthetic effect of natural \*\*\*\* on the front face of a base plate plywood, although already of the same synthetic-resin system -- \*\*\*\*\* from the front face of the makeup veneer (22) -- it needs -- in addi drawing 4 .

[0003] Namely, the 1st adhesives (11) of a synthetic-resin system are first applied to the front face of a base plate plywood (10) as the 1st process (i). In the 2nd process (ii) which sticks paper (12) with a sticking-by-pressure roll (13) or a monotonous press, and carries out separate independence after that from the upper part The 2nd adhesives (14) of a synthetic-resin system are applied to the front face of the above-mentioned paper (12), and from the upper part, the \*\* companion makeup veneer (15) is stuck with a hotpress (16), and it is unifying.

[0004]

[Problem(s) to be Solved by the Invention] However, if the 1st adhesives (11) are applied so much in the conventional above-mentioned manufacturing method Since this will penetrate the paper (12), will adhere to the front face of effusion, a sticking-by-pressure roll (13), or a monotonous press upwards and will soil this at the time of attachment sticking by pressure of paper (12) to a base plate plywood (10), the coverage -- few -- not specifying -- it does not obtain, but if it does so, the 1st adhesives (11) will bring the result which sinks only into the rear face of paper (12) part

[0005] Then, if the above-mentioned 2nd adhesives (14) when [ required ] compensating the bond strength of the makeup veneer (15) by the 1st adhesives (11) are applied so much the time of the attachment heat and pressure of the makeup veneer as opposed to paper (12) in this ] (15) -- the -- thin -- the conduit of the \*\*\*\* makeup veneer (15) etc. -- penetrating -- the upper part -- effusion -- Since the effusion \*\*\*\*\* (14) will check fixing of tinction coating and will produce tinction nonuniformity, in case surface coating of tinction coating is succeedingly performed to the makeup veneer (15), the coverage of the 2nd adhesives (14) -- few -- not adjusting -- it does not obtain, but if it does so, the 2nd adhesives (14) will bring the result which sinks only into the front face of the above-mentioned paper (12) part

[0006] That is, locally, the above-mentioned paper (12) does not pass over the 1st and 2 adhesives (11) and (14) for it to be in the status of the front face and rear face that it sank in, but it remains with the stencil paper status so that the interval may make both adhesives (11) and (14) isolate so that clearly from the expanded sectional view of drawing 5 having shown the completion status of elegance conventionally.

[0007] Consequently, during the use as a product, by change of humidity with time, the above-mentioned paper (12) does not repeat intumescence and deflation, the makeup veneer (15) becomes easy to produce an interlaminar peeling from the interstitial segment in the stencil paper status, and an endurance strength cannot be maintained.

[0008] As a cure which prevents occurrence of the above-mentioned tinction nonuniformity, although there is also a method of coloring it the 2nd adhesives (14), since the various tinction according to this must be prepared whenever the color tone of the makeup veneer (15) carries out difference change, it is remarkably complicated and, now, is inferior to mass-production nature or versatility.

[0009] Moreover, since the grain direction of paper (12) and the grain direction of the makeup veneer (15) are stuck on the adaptation status that it is parallel so to speak as suggested from the decomposition status of drawing 6 , too, it is easy to produce the surface crack of the makeup veneer (15) in alignment with the grain direction by the aging in use, and it is also related in the conventional above-mentioned manufacturing method, to this that the coverage of the 2nd above-mentioned adhesives (14) must be lessened.

[0010] Furthermore, since the 1st process (i) which sticks paper (12) on a base plate plywood (10) in the conventional above-mentioned manufacturing method, and the 2nd process (ii) which sticks the makeup veneer (15) on the paper (12) have gained separate independence as a production line or a machine, Attachment work of the makeup veneer [ in / unless it cannot mass-produce a makeup \*\*\*\* plywood efficiently but the 1st adhesives (11) in the 1st above-mentioned process (i) carry out xeransis hardening / the 2nd process (ii) ] (15) in a short time cannot be performed.

[0011] In addition, although there may also be the technique of carrying out the \*\*\*\*\* work of the above-mentioned paper

(12) in the case of a special and high-class makeup \*\*\*\* plywood, now, there is a possibility of producing the wrinkle approach of paper (12), and if it is not after the \*\*\*\*\* , since attachment work of the makeup veneer (15) cannot be performed too, there is a problem which cannot improve working capacity like the above.

[0012]

[Means for Solving the Problem] Enhancement of such a technical problem is planned, for the reason, it is characterized by having stuck on the related status that the grain direction crosses the \*\* companion makeup veneer with the grain direction of the above-mentioned paper to the front face of a base plate plywood, and uniting with it through the synthetic-resin adhesion layer which consists of the adhesives of a synthetic-resin system with which it sank into paper and its whole as a makeup \*\*\*\* plywood, and this invention is [0013]. Moreover, by applying the synthetic-resin system 1st adhesives for paper attachment to the front face of a base plate plywood, and sticking and sticking paper by pressure from the upper part as a manufacturing method of the above-mentioned makeup \*\*\*\* plywood After the 1st above-mentioned adhesives form in the whole paper the synthetic-resin adhesion layer with which it sank in, the synthetic-resin system 2nd adhesives for makeup veneer attachment are applied to the front face of the synthetic-resin adhesion layer. It is characterized by the grain direction sticking and changing the heat and pressure of the \*\* companion makeup veneer into the related status which crosses the grain direction of the above-mentioned paper from the upper part.

[0014]

[Embodiments of the Invention] Hereafter, if the detail of this invention is explained based on a drawing, in the drawing 1 showing the decomposition status of the makeup \*\*\*\* plywood (A), (20) will be a base plate plywood and will have illustrated the normal plywood (lauan plywood) of five plies. The paper of a character in which the \*\* companion makeup veneer and (y-y) are inserted in the orientation of fiber (\*\*\*\*) of the front face, (23) is inserted between [ of the above-mentioned makeup veneer (22) and a base plate plywood (20) ] vertical for the orientation of fiber (\*\*\*\*) of the front veneer (21) and (22), and (x-x) can sink in the below-mentioned adhesives, and (z-z) have suggested the grain direction of [0015] In manufacturing the above-mentioned makeup \*\*\*\* plywood (A) The paper attachment process (I) of drawing 2 , and a makeup veneer attachment process (II) A parallel installation is carried out as a consistent conveyance line of a base plate plywood (20), and this applies the 1st adhesives (24) for paper attachment to the front face of the base plate plywood (20) by use of an application roll (illustration ellipsis) etc. first as an initial complement into which it may sink later on at the whole paper (23).

[0016] Although it is sufficient if it is the synthetic-resin system adhesives of the liquid which permeates paper (23) as the 1st adhesives (24) at \*\*, and can stick the paper (23) on a base plate plywood (20), what mixed thermoplastic adhesives, such as an acetic-acid vinyl-resin emulsion, and thermosetting adhesives, such as a urea resin, on the basis of fixed proportion is desirable. And what carried out many mixed manufacture of the thermosetting adhesive as compared with the thermoplastic adhesive can say that it is the optimum. a lid -- carrying out -- the permeability and the waterproof adhesive power to paper (23) -- \*\*\*\*\* -- it is because things are made

[0017] Subsequently to the base plate plywood (20) with which the 1st above-mentioned adhesives (24) were applied, paper (23) is stuck and stuck by pressure from the upper part. Although it does not interfere even if it sticks this with a monotonous press and it sticks it by pressure, using the sheet gestalt as the paper (23), it is desirable to adopt the paper (23) of the roll gestalt as shown in drawing 2 , to let out this, to let out without wrinkle approach from a roll (25), to stick with \*\* et al. and a [Number of appeal against examiner's decision of rejection]er's decis

[0018] And according to the permeability of the 1st above-mentioned adhesives (24), and the compulsory sticking-by-pressure force of a rotation sticking-by-pressure roll (26), the 1st adhesives (24) are uniformly infiltrated into the whole paper (23), and the synthetic-resin adhesion layer (27) of \*\*\*\* one which does not remain as the paper (23) is in the stencil paper status is formed.

[0019] Although illustration ellipsis has been carried out, the front face of the above-mentioned rotation sticking-by-pressure roll (26) is made to face the spray nozzle of the doctor blade and its vibrator for scratching the adhesives (24) which carried out effusion adhesion, and washing them, and a penetrant remover etc. on the relation which the 1st above-mentioned adhesives (24) will penetrate paper (23), and will adhere to the front face of effusion and a rotation sticking-by-pressure roll (26) upwards in that case.

[0020] such -- scratching -- taking -- an attached installation of a soaping-machine machine -- per coverage of the 1st above-mentioned adhesives (24) -- precise adjustment -- being unnecessary -- it will become, this can be easily applied to the front face of a base plate plywood (20) as many scale divisions, moreover the whole paper (23) will be infiltrated, the above-mentioned synthetic-resin adhesion layer (27) will be boiled steadfast, and it can form with sufficient stability

[0021] And after the above-mentioned attachment sticking by pressure, the paper (23) is cut into constant \*\* according to the size of a base plate plywood (20). This can be cut convenient by the cutter (illustration ellipsis) which is interlocked with this and fluctuates in the process in which the base plate plywood (20) is conveyed automatically intermittently one by one, after sticking the separation leader of the paper (23) which is in a first-time base plate plywood (20) through the 1st adhesives (24) at the roll gestalt.

[0022] Then, although the 2nd adhesives (28) are too applied to the front face of the above-mentioned paper (23) by use of an application roll etc. in order to stick the makeup veneer (22) next, the coverage can be set up few as compared with it of the 1st above-mentioned adhesives (24). The above-mentioned synthetic-resin adhesion layer (27) which carries out a lid and serves as the base is because it is already formed.

[0023] What mixed thermoplastic adhesives, such as an acetic-acid vinyl-resin emulsion, and thermosetting adhesives, such as

a urea resin, on the basis of fixed proportion is suitable as well as the 1st above-mentioned adhesives (24) also as the 2nd adhesives (28) for the makeup veneer attachment. Then, it is because it can be made to unite with the affinity status with the above-mentioned synthetic-resin adhesion layer (27) by applying, while the 1st adhesives (24) do not carry out xeransis hardening of this.

[0024] However, it is the most effective to suppress the permeability to the makeup veneer (22) to the reverse with the 1st above-mentioned adhesives (24) in that case by carrying out many mixed manufacture of the thermoplastic adhesive as compared with a thermosetting adhesive. It is because surface coating by tinction coating to the makeup veneer (22) can be performed proper and the tinction nonuniformity etc. can be prevented.

[0025] To the base plate plywood (20) with which the 2nd above-mentioned adhesives (28) were applied, finally, from the upper part, the makeup veneer (22) is stuck with a hotpress (29), and carries out heat and pressure. And the laminating of the orientation (y-y) of fiber (\*\*\*\*) of the makeup veneer (22) is changed into the grain direction (z-z) and cross \*\*\*\* status of the above-mentioned paper (23) as suggested from drawing 1 in that case.

[0026] That is, in order that the paper (23) of the above-mentioned roll gestalt may equip the delivery longitudinal direction with the fiber which carries out adaptation extension, it sticks the above-mentioned makeup veneer (22) on the related status that the grain direction (z-z) of paper (23) and the orientation (y-y) of fiber (\*\*\*\*) cross at right angles, and is unified. Then, the synthetic-resin adhesion layer (27) which consists of the 1st adhesives (24) with which it sank into the above-mentioned paper (23) and its whole will demonstrate the effective confrontation intensity to the surface crack of the makeup veneer (22).

[0027] Although the orientation (x-x) of fiber (\*\*\*\*) of the front veneer (21) in a base plate plywood (20) and the orientation (y-y) of fiber (\*\*\*\*) of the makeup veneer (22) are stuck in parallel and it is set as the status in this point and the drawing 1 It does not interfere, even if it makes the cross \*\*\*\* status arrange the grain direction (y-y) of the makeup veneer (22), and the grain direction (x-x) of the front veneer (21), as long as the above-mentioned meaning can be attained.

[0028] As the makeup \*\*\*\* plywood (A) manufactured as mentioned above being shown in the expanded sectional view of drawing 3, Since the synthetic-resin adhesion layer (27) which intervenes between [ of the makeup veneer (22) and a base plate plywood (20) ] vertical consists of the 1st adhesives (24) with which it sank into paper (23) and its whole and does not remain with the stencil paper status, It is not influenced by humidity change [ in use ] with time, but there is no possibility of producing the interlaminar peeling of the makeup veneer (22).

[0029] And the grain direction (z-z) of the paper (23) and the orientation (y-y) of fiber (\*\*\*\*) of the makeup veneer (22) will demonstrate the confrontation intensity which was excellent also to the surface crack of the makeup veneer (22) as the above-mentioned synthetic-resin adhesion layer (27) on the relation in the cross \*\*\*\* status, and can maintain the original esthetic effect of the makeup veneer (22) long. Therefore, the makeup \*\*\*\* plywood (A) of this invention can be widely used for the intended use of various building materials, such as a crown plate and a tapetum, furniture material, and others besides flooring.

[0030]

[Effect of the Invention] As mentioned above, the makeup \*\*\*\* plywood (A) of this invention minds the synthetic-resin adhesion layer (27) which consists of the adhesives (24) of a synthetic-resin system with which it sank into paper (23) and its whole. Since it sticks on the related status that the grain direction (y-y) crosses the \*\*\*\*\* makeup veneer (22) with the grain direction (z-z) of the above-mentioned paper (23) to the front face of a base plate plywood (20) and it has united with it, it is effective in the technical problem of the conventional technique stated to the beginning being certainly improvable.

[0031] Namely, between [ of the \*\* companion makeup veneer (22) and a base plate plywood (20) ] vertical Since the synthetic-resin adhesion layer (27) which consists of the adhesives (24) of a synthetic-resin system with which it sank into paper (23) and its whole intervenes and the paper (23) does not remain in the stencil paper status in a pars intermedia like the paper (12) shown as a conventional article of drawing 5, It is not influenced at all by the temperature change [ in use ] with time, but there is no possibility that the makeup veneer (22) may carry out an interlaminar peeling from a base plate plywood (20). Consequently, it can use for various intended use as a makeup \*\*\*\* plywood (A) excellent in the endurance strength and the stability.

[0032] And the grain direction of the paper (23) which forms the above-mentioned synthetic-resin adhesion layer (27) (z-z), Since it is in the relation which the grain direction (y-y) of the makeup veneer (22) crosses, and the makeup veneer (22) sticks on a base plate plywood (20) and is united with it in the status, The confrontation intensity in which the above-mentioned adhesion layer (27) was excellent to the surface crack of the makeup veneer (22) is demonstrated, and the original esthetic effect as a makeup \*\*\*\* plywood (A) can also be attained.

[0033] Moreover, by applying the synthetic-resin system 1st adhesives for paper attachment (24) to the front face of a base plate plywood (20), and sticking and sticking paper (23) by pressure from the upper part as a manufacturing method of the above-mentioned makeup \*\*\*\* plywood (A), in this invention After the 1st above-mentioned adhesives (24) form in the whole paper (23) the synthetic-resin adhesion layer (27) with which it sank in, the synthetic-resin system 2nd adhesives for makeup veneer attachment (28) are applied to the front face of the synthetic-resin adhesion layer (27). In order that the grain direction (y-y) may stick and change the heat and pressure of the \*\* companion makeup veneer (22) into the related status which crosses the grain direction (z-z) of the above-mentioned paper (23) from the upper part, attachment of paper (23) of on the process in which a base plate plywood (20) is conveyed automatically intermittently along with a conveyance line, and as opposed to the front face, and attachment of the continuing makeup veneer (22) -- a short time -- it can carry out efficiently and volume efficiency can be exhibited to the maximum extent

[0034] the permeability of the 1st adhesives [ as opposed to / if it becomes / the whole paper (23) ] (24) which adopt the

configuration of a claim 4 especially -- \*\*\*\*\* -- things are made and there is an effect which can form easily and certainly the synthetic-resin adhesion layer (27) which harmonized completely [0035] on the other hand -- while uniting the 2nd adhesives (28) with the mutual affinity status as the 1st above-mentioned adhesives (24) and adhesives of the same synthetic-resin system -- \*\*\*\*\* from the front face of the makeup veneer (22) -- it needs -- in addition, there is no it, as a result surface coating of the makeup veneer (22) can also be performed proper, and the makeup \*\*\*\* plywood (A) of the outstanding esthetic effect can be obtained easily

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[Translation done.]

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(71) 【出願人】 (71) [PATENTEE/ASSIGNEE]

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【氏名又は名称】 田原 捷宏 Katsuhiro Tahara

【住所又は居所】 [ADDRESS]  
大阪府藤井寺市北岡 2 丁目 1 2  
- 2 7

(72) 【発明者】 (72) [INVENTOR]

【氏名】 吉田 武夫 Takeo Yoshida

【住所又は居所】 [ADDRESS]  
福岡県北九州市八幡西区光明一  
丁目 7 番 9 号

(72) 【発明者】 (72) [INVENTOR]

【氏名】 田原 捷宏 Katsuhiro Tahara

【住所又は居所】 [ADDRESS]  
大阪府藤井寺市北岡 2 丁目 1 2  
- 2 7

(74) 【代理人】 (74) [PATENT AGENT]

【弁理士】 [PATENT ATTORNEY]

【氏名又は名称】 山下 賢二 Kenji Yamashita

(57) 【要約】 (57) [SUMMARY]



## 【課題】

化粧単板の剥離や表面割れなどを生じない化粧貼り合板を提供する。

## 【SUBJECT】

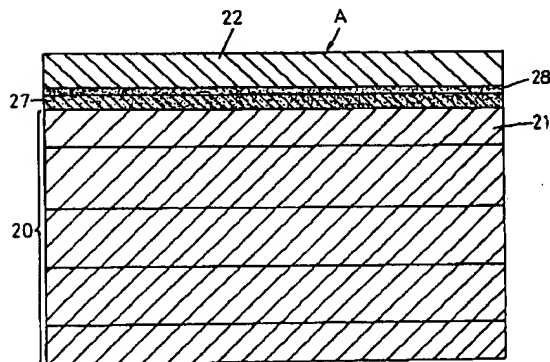
The decorative veneer laminated plywood which produces neither peeling of a decorative veneer, nor a surface crack is provided.

## 【解決手段】

紙(23)とその全体に含浸された合成樹脂系の接着剤(24)とから成る合成樹脂接着膜(27)を介して、薄づき化粧単板(22)を台板合板(20)の表面へ、その繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け一体化した。

## 【SOLUTION】

The thinly sliced decorative veneer (22) is pasted to the surface of a base plate plywood (20) in the relationship condition that fiber direction (y-y) and the fiber direction (z-z) of above-mentioned paper (23) cross each other, through the synthetic resin bonding film (27) which consists of paper (23) and a synthetic resin adhesive (24) impregnated entirely.



## 【特許請求の範囲】

## 【CLAIMS】

## 【請求項1】

紙(23)とその全体に含浸された合成樹脂系の接着剤(24)とから成る合成樹脂接着膜(27)を介して、薄づき化粧単板(22)を台板合板(20)の表面へ、その繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け一体化した。

## 【CLAIM 1】

A decorative veneer laminated plywood, in which the fiber direction (y-y) bonded and integrated the thinly sliced decorative veneer (22) to the surface of a base plate plywood (20) in the relationship condition which carries out a cross to the fiber direction (z-z) of above-mentioned paper (23), through the synthetic resin bonding film (27) which consists of paper

—z)とクロスする関係状態に貼り付け一体化したことを特徴とする化粧貼り合板。

**【請求項 2】**

化粧単板 (22) の表面に浸み出さない同系の化粧単板貼り付け用接着剤 (28) を、合成樹脂接着膜 (27) の表面に塗布したことを特徴とする請求項 1 記載の化粧貼り合板。

**【請求項 3】**

台板合板 (20) の表面に紙貼り付け用の合成樹脂系第 1 接着剤 (24) を塗布して、その上方から紙 (23) を貼り付け圧着することにより、その紙 (23) の全体に上記第 1 接着剤 (24) が含浸された合成樹脂接着膜 (27) を形成した後、その合成樹脂接着膜 (27) の表面に化粧単板貼り付け用の合成樹脂系第 2 接着剤 (28) を塗布して、その上方から薄づき化粧単板 (22) をその繊維方向 (y-y) が上記紙 (23) の繊維方向 (z-z) とクロスする関係状態に貼り付け熱圧することを特徴とする化粧貼り合板の製造法。

**【請求項 4】**

第 1 接着剤 (24) と第 2 接着剤 (28) との何れも熱可塑性接着剤と熱硬化性接着剤との混合物とし、しかもその混合比率を第 1 接着剤 (24) では熱硬化性接着剤を多く、第 2 接着剤 (28) では逆に熱可塑性接着剤を多く、各々調製することを特徴とする請求項 3 記載の化粧

(23) and a synthetic resin adhesive (24) impregnated entirely.

**[CLAIM 2]**

A decorative veneer laminated plywood of the Claim 1, in which the affiliated adhesive (28) for decorative veneer sticking on which does not ooze was applied to the surface of a synthetic resin bonding film (27) on the surface of the decorative veneer (22).

**[CLAIM 3]**

A manufacturing method of the decorative veneer laminated plywood, in which the synthetic resin system 1st adhesive for paper sticking on (24) is applied to the surface of a base plate plywood (20).

The press attachment of the paper (23) is bonded and carried out from the upper part. After this forms the synthetic resin bonding film (27) with which the paper (23) was impregnated the 1st above-mentioned adhesive (24) entirely, the synthetic resin system 2nd adhesive for decorative veneer sticking on (28) is applied to the surface of the synthetic resin bonding film (27). The fiber direction (y-y) bonds and carries out the hot pressure of the thinly sliced decorative veneer (22) to the relationship condition which carries out a cross to the fiber direction (z-z) of above-mentioned paper (23), from the upper part.

**[CLAIM 4]**

A manufacturing method of the decorative veneer laminated plywood of the Claim 3, which makes as the mixture of any thermoplastic adhesive and thermosetting adhesive of the 1st adhesive (24) and the 2nd adhesive (28).

And with the 1st adhesive (24), many thermosetting adhesive is prepared the blend ratio. With the 2nd adhesive (28), many thermoplastic adhesive is prepared conversely.

貼り合板の製造法。

**【発明の詳細な説明】**

**[DETAILED DESCRIPTION OF INVENTION]**

**【 0 0 0 1 】**

**[0001]**

**【発明の属する技術分野】**

本発明は各種の建材や家具材などに有用な化粧貼り合板とその製造法に関する。

**[TECHNICAL FIELD]**

This invention relates to a decorative useful sticking plywood and its manufacturing method at various building materials, a furniture material, etc.

**【 0 0 0 2 】**

**[0002]**

**【従来の技術】**

天然杢理の美的効果を活かした薄づき化粧単板を、台板合板の表面に接着一体化した化粧貼り合板としては、既に市販されているフローリングが典型例であるが、その従来品は図4のような工程を経て製造されている。

**[PRIOR ART]**

As a decorative veneer laminated plywood which carried out the adhesion integration of the thinly sliced decorative veneer which harnessed the esthetic effect of natural grain, on the surface of a base plate plywood, the flooring already marketed is an example of a type.

However, the conventional product is manufactured through the process as shown in Figure 4.

**【 0 0 0 3 】**

即ち、先ず第1工程(i)として、台板合板(10)の表面に合成樹脂系の第1接着剤(11)を塗布し、その上方から紙(12)を圧着ロール(13)又は平板プレスによって貼り付け、その後別個独立する第2工程(ii)において、上記紙(12)の表面に合成樹脂系の第2接着剤(14)を塗布し、その上方から薄づき化粧単板(15)をホットプレス(16)によって貼り付け一体化している。

**[0003]**

That is, as the 1st process (i), the 1st adhesive (11) of a synthetic resin group is applied to the surface of a base plate plywood (10), and paper (12) is first bonded with a press attachment roll (13) or a flat plate press from the upper part. After that in the 2nd process (ii) which is independent independently, the 2nd adhesive (14) of a synthetic resin group is applied to the surface of above-mentioned paper (12).

A thin decorative veneer (15) is bonded and integrated by the hot press (16) from the upper part.

**【 0 0 0 4 】**

**[0004]**

**【発明が解決しようとする課題】**

ところが、従来の上記製造法では第1接着剤(11)を多量に塗布すると、これが台板合板(10)に対する紙(12)の貼り付け圧着時に、その紙(12)を透過して上方へ浸み出し、圧着ロール(13)又は平板プレス表面に付着して、これを汚損してしまうことになるため、その塗布量を少なく規定せざるを得ず、そうすると第1接着剤(11)が紙(12)の裏面一部だけにしか含浸されない結果となる。

**【0005】**

そこで、その第1接着剤(11)による化粧単板(15)の接着強度を補償する必要上、上記第2接着剤(14)を多量に塗布すると、これが紙(12)に対する化粧単板(15)の貼り付け熱圧時に、その薄肉な化粧単板(15)の導管などを透過して上方へ浸み出し、引き続き化粧単板(15)に着色塗料の表面塗装を行なう際、その浸み出した接着剤(14)が着色塗料の定着を阻害し、着色ムラを生ずることになるため、その第2接着剤(14)の塗布量も少なく調整せざるを得ず、そうすると第2接着剤(14)が上記紙(12)の表面一部だけにしか含浸されない結果となる。

**【0006】**

つまり、従来品の完成状態を示した図5の拡大断面図から明白

**[PROBLEM ADDRESSED]**

When applying the 1st adhesive (11) a large quantity in the conventional above-mentioned manufacturing method At the time of the sticking on press attachment of paper (12) with respect to a base plate plywood (10), this permeates the paper (12) and oozes upwards. It adheres to the surface of a press attachment roll (13) or a flat plate press.

This will be stained. Therefore, the rule of the application quantity must be carried out few. When doing so, it will become the result by which the 1st adhesive (11) is impregnated by back-side a part of paper (12).

**[0005]**

Then, on the necessity of compensating the adhesion strength of the decorative veneer (15) by the 1st adhesive (11), When applying the 2nd above-mentioned adhesive (14) a large quantity, at the time of the sticking on hot pressure of the decorative veneer (15) with respect to paper (12), this permeates the conduit of the thinly sliced decorative veneer (15) etc., and oozes upwards.

In case surface coating of a colour pigmented paint is succeeding performed to a decorative veneer (15), the adhesive (14) which oozed inhibits a fixing of a colour pigmented paint.

The colouring nonuniformity will be produced. Therefore, the application quantity of the 2nd adhesive (14) must also be adjusted few. When doing so, it will become the result by which the 2nd adhesive (14) is impregnated by a part of above-mentioned surface paper (12).

**[0006]**

In other words, Clearly from the expanded sectional view having shown the perfection

なように、上記紙(12)はその表面と裏面との局部的に第1、2接着剤(11)(14)を含浸した状態となるに過ぎず、その中間が両接着剤(11)(14)を隔離させる如く、原紙状態のままに残存するのである。

**【0007】**

その結果、製品としての使用中、経時的な湿度の変化により、上記紙(12)が膨張と収縮を繰り返し、その原紙状態にある中間部分から化粧単板(15)が層間剥離を生じやすくなり、耐久強度を維持することができない。

**【0008】**

上記着色ムラの発生を防止する対策としては、その第2接着剤(14)に着色を施す方法もあるが、これでは化粧単板(15)の色調が相違変化する毎に、これに応じた各種着色の調製を行なわなければならないので、著しく煩雑であり、量産性や汎用性に劣る。

**【0009】**

又、従来の上記製造法では図6の分解状態から示唆される通り、紙(12)の繊維方向と化粧単板(15)の繊維方向とが、言わば平行する順応状態に貼り付けられているため、やはり使用中の経時変化によって、その繊維方向に沿う化粧単板(15)の表面割れを生じやすく、このことには上記第2接着剤(14)の塗布量を少なくせざるを得な

condition of a conventional product of Figure 5, Above-mentioned paper (12) only becomes the condition of the surface and back-side of having impregnated locally 1st and the 2nd adhesive (11) and (14). It remains with base paper condition so that the middle may make a both adhesive (11) and (14) isolate.

**[0007]**

As a result, in the use as a product, by time-dependent change of humidity, above-mentioned paper (12) repeats expansion and a contraction, and a decorative veneer (15) becomes easy to produce an interlaminar peeling from the intermediate part in the base paper condition.

Durable strength cannot be maintained.

**[0008]**

As a countermeasure which prevents occurrence of the above-mentioned colouring nonuniformity, there is also a method of colouring the 2nd adhesive (14).

However, this, since various colouring must be prepared depending on this whenever the color tone of a decorative veneer (15) carries out a difference change, it is remarkably complicated.

It deteriorates to mass production property or general purpose.

**[0009]**

Moreover, in the conventional above-mentioned manufacturing method, the fiber direction of paper (12) and the fiber direction of a decorative veneer (15) are bonded on the adaptation condition that it is parallel so to speak as it is suggested from the decomposition condition of Figure 6. Therefore, it is easy to produce the surface crack of the decorative veneer (15) in alignment with the fiber direction by the variation in time course in use as expected. This is related that it must decrease the application quantity of the 2nd above-mentioned adhesive (14).

いことも関係する。

**【0010】**

更に、従来の上記製造法では台板合板(10)に紙(12)を貼り付ける第1工程(i)と、その紙(12)に化粧単板(15)を貼り付ける第2工程(ii)とが、製造ライン又は機械として分離独立しているため、短時間で効率良く化粧貼り合板を量産することができず、上記第1工程(i)での第1接着剤(11)が乾燥硬化しない限り、第2工程(ii)における化粧単板(15)の貼り付け作業を行なうことができない。

**【0011】**

尚、特殊・高級な化粧貼り合板の場合、上記紙(12)を手貼り作業する方法もあり得るが、これでは紙(12)の皺寄りを生ずるおそれがあり、その皺取り後でなければ、やはり化粧単板(15)の貼り付け作業を行なえないため、上記と同様に作業能率を向上できない問題がある。

**【0012】****【課題を解決するための手段】**

本発明はこのような課題の改良を企図しており、そのために化粧貼り合板として、紙とその全体に含浸された合成樹脂系の接着剤とから成る合成樹脂接着膜を介して、薄づき化粧単板を台板合板の表面へ、その繊維方向が上記紙の繊維方向とクロスす

**【0010】**

Furthermore, in the conventional above-mentioned manufacturing method, since the 1st process (i) which bonds paper (12) on a base plate plywood (10) and the 2nd process (ii) which bonds a decorative veneer (15) on the paper (12) partition and has been independent as a production line or machine, A decorative veneer laminated plywood cannot be mass-produced efficiently in a short time. Unless the 1st adhesive (11) in the 1st above-mentioned process (i) dry-hardens, sticking on operation of the decorative veneer (15) in the 2nd process (ii) cannot be performed.

**【0011】**

In addition in the case of special, high rank decorative veneer laminated plywood, there can be also the method of carrying out the hand sticking operation of the above-mentioned paper (12)

However, there is a possibility that wrinkles slippage of paper (12) may be produced, this.

If it is not after the wrinkle-removing, since sticking on operation of a decorative veneer (15) cannot be performed as expected, there is a problem which cannot improve the operation efficiency like an above.

**【0012】****【SOLUTION OF THE INVENTION】**

This invention has planned improvement of such a subject.

For the reason, as a decorative veneer laminated plywood, the fiber direction bonded and integrated the thinly sliced decorative veneer to the surface of a base plate plywood in the relationship condition which carries out a cross to the fiber direction of above-mentioned paper, through the synthetic resin bonding film

る関係状態に貼り付け一体化したことを特徴とし、

**【0013】**

又、上記化粧貼り合板の製造法として、台板合板の表面に紙貼り付け用の合成樹脂系第1接着剤を塗布して、その上方から紙を貼り付け圧着することにより、その紙の全体に上記第1接着剤が含浸された合成樹脂接着膜を形成した後、その合成樹脂接着膜の表面に化粧単板貼り付け用の合成樹脂系第2接着剤を塗布して、その上方から薄づき化粧単板をその繊維方向が上記紙の繊維方向とクロスする関係状態に貼り付け熱圧することを特徴とするものである。

**【0014】****【発明の実施の形態】**

以下、図面に基いて本発明の詳細を説明すると、その化粧貼り合板(A)の分解状態を表わした図1において、(20)は台板合板であり、5プライの普通合板(ラワン合板)を例示している。(x-x)はその表単板(21)の繊維(杣理)方向、(22)は薄づき化粧単板、(y-y)はその表面の繊維(杣理)方向、(23)は上記化粧単板(22)と台板合板(20)との上下相互間に介挿されて、後述の接着剤を含浸し得る性状の紙、(z-z)はその紙(23)の繊維方向を示唆している。

which consists of paper and its adhesive of a synthetic resin group impregnated entirely. It is characterized by the above.

**[0013]**

Moreover, as the manufacturing method of an above-mentioned decorative veneer laminated plywood, the synthetic resin system 1st adhesive for paper sticking on is applied to the surface of a base plate plywood.

The press attachment of the paper is bonded and carried out from the upper part. After this forms the synthetic resin bonding film of the paper with which the 1st above-mentioned adhesive was impregnated entirely, the synthetic resin system 2nd adhesive for decorative veneer sticking on is applied to the surface of the synthetic resin bonding film. The fiber direction bonds and carries out the hot pressure of the thinly sliced decorative veneer to the relationship condition which carries out a cross to the fiber direction of above-mentioned paper, from the upper part.

It is characterized by the above-mentioned.

**[0014]****[Embodiment]**

Hereafter, the detail of this invention is explained based on a drawing. In Figure 1 showing the decomposition condition of the decorative veneer laminated plywood (A), (20) is a base plate plywood.

The normal plywood (lauan plywood) of five ply is illustrated.

(x-x) is the direction of fibre (grain) of the front single plate (21). (22) is a thin decorative veneer. (y-y) is the direction of fibre (grain) of the surface. (23) is between vertical of an above-mentioned decorative veneer (22) and a base plate plywood (20). Each placed in the above.

The characteristic paper which can impregnate the below-mentioned adhesive, and (z-z) have suggested the fiber direction of the paper (23).

## 【0015】

上記化粧貼り合板（A）を製造するに当っては、図2の紙貼り付け工程（I）と化粧単板貼り付け工程（II）とを、台板合板（20）の一貫搬送ラインとして並列設置し、その台板合板（20）の表面に先ず紙貼り付け用の第1接着剤（24）を、これが追って紙（23）の全体に含浸され得る必要量として、塗布ロール（図示省略）などの使用により塗布する。

## 【0016】

茲に第1接着剤（24）としては、紙（23）に浸透して、その紙（23）を台板合板（20）に貼り付け得る液体の合成樹脂系接着剤であれば足りるが、酢酸ビニール樹脂エマルジョンなどの熱可塑性接着剤と、ユリア樹脂などの熱硬化性接着剤とを一定比率のもとに混合したものが好ましい。しかも、その熱硬化性接着剤を熱可塑性接着剤に比して多く混合調製したものが、最適であると言える。蓋し、紙（23）への浸透性と耐水接着力を昂めることができるからである。

## 【0017】

上記第1接着剤（24）が塗布された台板合板（20）に、次いで上方から紙（23）を貼り付け圧着する。その紙（23）としては枚葉形態を用いて、これを平板プレスにより貼り付け圧着してもさしつかえないが、図2のようなロール形態の紙

## [0015]

In manufacturing above-mentioned decorative veneer laminated plywood (A) The paper sticking on process (I) of Figure 2 and the decorative veneer sticking on process (II) The juxtaposition installation is carried out as a consistent conveyance line of a base plate plywood (20). This applies to the surface of the base plate plywood (20) first the 1st adhesive (24) for paper sticking on by use of a coating roll (illustration omission) etc. as a necessary amount by which paper (23) may be impregnated entirely later on.

## [0016]

As the 1st adhesive (24) Permeation is carried out to paper (23), and in the paper (23), if it is the synthetic resin group adhesive of a sticking liquid, it is sufficient for a base plate plywood (20).

However, that which mixed thermoplastic adhesives, such as a vinyl acetate resin emulsion, and thermosetting adhesives, such as a urea resin, on the basis of an fixed ratio is preferable.

And, that which carried out many mixture preparation of the thermosetting adhesive as compared with the thermoplastic adhesive can say that it is the most suitable.

Presumably, it is because a thing can do the permeability and the water-resistance adhesive strength to paper (23).

## [0017]

The press attachment of the paper (23) is subsequently bonded and carried out to the base plate plywood (20) with which the 1st above-mentioned adhesive (24) was applied, from the upper part.

The paper leaf form is used as the paper (23).

Even when it bonds this with a flat plate press and it carries out a press attachment, it does not interfere.



(23)を採用して、これを繰り出しロール(25)から皺寄りなく繰り出し乍ら、回転圧着ロール(26)により貼り付け圧着することが望ましい。

**【0018】**

そして、上記第1接着剤(24)の浸透性と回転圧着ロール(26)の強制的な圧着力とにより、その第1接着剤(24)を紙(23)の全体に万遍なく含浸させ、その紙(23)が原紙状態のままに残存しない混然一体の合成樹脂接着膜(27)を形成するのである。

**【0019】**

その際、上記第1接着剤(24)は紙(23)を透過して上方へ浸み出し、回転圧着ロール(26)の表面に付着することとなる関係上、図示省略してあるが、その浸み出し付着した接着剤(24)を掻き取り洗浄するためのドクターブレードやそのバイブレーター、洗浄液のスプレーノズルなどを、上記回転圧着ロール(26)の表面に臨ませる。

**【0020】**

このような掻き取り洗浄機器の付属設置により、上記第1接着剤(24)の塗布量につき精密な調整が不要となり、これを多い目として容易に台板合板(20)の表面へ塗布することができ、しかも紙(23)の全体に含浸させて、上記合成樹脂接着膜(27)を確固に安定良く形成し得ることとなる。

However, paper (23) of a roll form as shown in Figure 2 is adopted, it lets out this, and it lets out without wrinkles slippage from a roll (25), and mostly, it bonds by the rotation press attachment roll (26), and it is preferable to carry out a press attachment.

**[0018]**

And, paper (23) makes the 1st adhesive (24) impregnate uniformly entirely according to the permeability of the 1st above-mentioned adhesive (24), and the forced press attachment strength of a rotation press attachment roll (26).

The synthetic resin bonding film (27) which does not remain as the paper (23) is in base paper condition is formed.

**[0019]**

In that case, the 1st above-mentioned adhesive (24) will permeate paper (23), will ooze it upwards, and will adhere to the surface of a rotation press attachment roll (26).

Illustration omission has been carried out on the relationship.

However, the surface of an above-mentioned rotation press attachment roll (26) is made to face the spray nozzle of a doctor blade, its vibrator, and cleaning liquid for carrying out the raking cleaning of the adhesive (24) which oozed and adhered etc.

**[0020]**

By such attached installation of a raking cleaning apparatus, precise adjusting becomes unnecessary about the application quantity of the 1st above-mentioned adhesive (24).

This can be easily applied to the surface of a base plate plywood (20) as many eyes.

And paper (23) makes it impregnate entirely.

An above-mentioned synthetic resin bonding film (27) will be boiled steadfast, and it will form stably well.

## 【0021】

そして、上記貼り付け圧着後にはその紙(23)を台板合板(20)の大きさに応じて、定寸にカットするのである。このことは、初回の台板合板(20)に第1接着剤(24)を介して、ロール形態にある紙(23)の切り離し始端部を貼り付けた上、その台板合板(20)を順次自動間歇的に搬送する過程において、これと連動して昇降するカッター(図示省略)により、支障なくカットすることができる。

## 【0022】

そこで、次に化粧単板(22)を貼り付けるため、上記紙(23)の表面に第2接着剤(28)をやはり塗布ロールなどの使用によって塗布するが、その塗布量は上記第1接着剤(24)のそれに比して少なく設定することができる。蓋し、そのベースとなる上記合成樹脂接着膜(27)が、既に形成されているからである。

## 【0023】

その化粧単板貼り付け用の第2接着剤(28)としても上記第1接着剤(24)と同じく、酢酸ビニール樹脂エマルジョンなどの熱可塑性接着剤と、ユリア樹脂などの熱硬化性接着剤とを一定比率のもとに混合したものが好適である。そうすれば、これを第1接着剤(24)が乾燥硬化しない間に塗布することにより、その上記合成樹脂接着膜

## [0021]

And, after the above-mentioned sticking on press attachment, the cut of the paper (23) is carried out to the constant length depending on the magnitude of a base plate plywood (20).

After this bonds the separation start end part of the paper (23) which is in the base plate plywood (20) of the first time through the 1st adhesive (24) at a roll form In the process that the base plate plywood (20) is sequentially conveyed automatically intermittently By the cutter (illustration omission) which is interlocked with this and elevates, a cut can be carried out convenient.

## [0022]

Then, in order to bond a decorative veneer (22) next, the 2nd adhesive (28) is applied to the surface of above-mentioned paper (23) by use of a coating roll etc. as expected.

However, the application quantity can be set up few as compared with it of the 1st above-mentioned adhesive (24).

Presumably, the above-mentioned synthetic resin bonding film (27) used as the base is because it already forms.

## [0023]

Also as the 2nd adhesive (28) for the decorative veneer sticking on, the 1st above-mentioned adhesive (24) and the thing which mixed similarly thermoplastic adhesives, such as a vinyl acetate resin emulsion, and thermosetting adhesives, such as a urea resin, on the basis of an fixed ratio are suitable.

Then, while the 1st adhesive (24) does not dry-harden this, it applies. Thereby, it is because the affinity condition with the above-mentioned synthetic resin bonding film (27) can be made to integrate.

(27) との親和状態に一体化させることができるからである。

**【0024】**

但し、その場合上記第1接着剤(24)との逆に、熱可塑性接着剤を熱硬化性接着剤に比して多く混合調製することにより、化粧単板(22)への浸透性を抑制することが、最も効果的である。化粧単板(22)への着色塗料による表面塗装を適正に行なえ、その着色ムラなども防止し得るからである。

**【0025】**

上記第2接着剤(28)も塗布された台板合板(20)に対して、最後に上方から化粧単板(22)をホットプレス(29)により貼り付け熱圧する。しかも、その際には図1から示唆される通り、化粧単板(22)の繊維(奎理)方向(y-y)を、上記紙(23)の繊維方向(z-z)とクロス貼り状態に積層させる。

**【0026】**

つまり、上記ロール形態の紙(23)はその繰り出し長手方向に順応延在する繊維を備えるため、上記化粧単板(22)をその繊維(奎理)方向(y-y)が紙(23)の繊維方向(z-z)と直交する関係状態に貼り付け一体化するのである。そうすれば、上記紙(23)とその全体に含浸された第1接着剤(24)とから成る合成樹脂接着膜(27)が、その化粧単板

**[0024]**

However, as compared with a thermosetting adhesive, many product made from a cross modulation of the thermoplastic adhesive is carried out to the contrary with the 1st above-mentioned adhesive (24) in that case. It is the most effective that this suppresses permeability to a decorative veneer (22).

Surface coating by the colour pigmented paint to a decorative veneer (22) can be performed appropriately. It is because the colouring nonuniformity etc. can be prevented.

**[0025]**

Against the base plate plywood (20) with which the 2nd above-mentioned adhesive (28) was applied Finally, from the upper part, a decorative veneer (22) is bonded by the hot press (29), and carries out a hot pressure.

And, as being suggested from Figure 1 in that case, the fiber direction (z-z) of above-mentioned paper (23) and cross sticking condition are made to laminate the direction (y-y) of fibre (grain) of a decorative veneer (22).

**[0026]**

In other words, the paper (23) of an above-mentioned roll form equips the delivery longitudinal direction with fibre which carries out adaptation extension. Therefore, the direction (y-y) of fibre (grain) bonds and integrates the above-mentioned decorative veneer (22) in the relationship condition crossed orthogonally with the fiber direction (z-z) of paper (23).

Then, the synthetic resin bonding film (27) which consists of above-mentioned paper (23) and its 1st above-mentioned adhesive (24) impregnated entirely will demonstrate effective confrontation strength with respect to the surface crack of the decorative veneer (22).

(22)の表面割れに対する効果的な対抗強度を発揮することとなる。

**【0027】**

この点、図1では台板合板(20)における表単板(21)の繊維(奎理)方向(x-x)と、化粧単板(22)の繊維(奎理)方向(y-y)とを平行貼り状態に設定しているが、上記趣旨を達成できる限り、化粧単板(22)の繊維方向(y-y)と表単板(21)の繊維方向(x-x)とをクロス貼り状態に配列させてもさしつかえない。

**【0028】**

上記のように製造された化粧貼り合板(A)は図3の拡大断面図に示す通り、その化粧単板(22)と台板合板(20)との上下相互間に介在する合成樹脂接着膜(27)が、紙(23)とその全体に含浸された第1接着剤(24)とから成り、原紙状態のままに残存しないため、使用中の経時的な湿度変化に影響されず、化粧単板(22)の層間剥離を生ずるおそれがない。

**【0029】**

しかも、その紙(23)の繊維方向(z-z)と化粧単板(22)の繊維(奎理)方向(y-y)とは、クロス貼り状態にある関係上、その上記合成樹脂接着膜(27)として化粧単板(22)の表面割れに対しても優れた対抗強度を発揮し、化粧単板(22)の本来的な美的効果を永く維持し得ることになる。そ

**[0027]**

In Figure 1 the direction (x-x) of fibre (grain) of the front single plate (21) in a base plate plywood (20) and the direction (y-y) of fibre (grain) of a decorative veneer (22) are set as parallel sticking condition in this point.

However, as long as the above-mentioned meaning can be attained, even when it makes cross sticking condition arrange the fiber direction (y-y) of a decorative veneer (22), and the fiber direction (x-x) of a front single plate (21), it does not interfere.

**[0028]**

As decorative veneer laminated plywood (A) manufactured as mentioned above being shown in the expanded sectional view of Figure 3, the synthetic resin bonding film (27) which intervenes between the decorative veneer (22) and a base plate plywood (20) vertically It consists of paper (23) and its 1st adhesive (24) impregnated entirely. Since it does not remain with base paper condition, it is not influenced by time-dependent humidity change in use. There is no possibility that the interlaminar peeling of a decorative veneer (22) may be produced.

**[0029]**

Moreover from the relationship which the fiber direction (z-z) of the paper (23) and the direction (y-y) of fibre (grain) of a decorative veneer (22) have in cross sticking condition Excellent confrontation strength also with respect to the surface crack of a decorative veneer (22) is demonstrated as the above-mentioned synthetic resin bonding film (27). The original esthetic effect of a decorative veneer (22) will be maintained long.

Therefore, decorative veneer laminated plywood (A) of this invention can be widely used

のため、本発明の化粧貼り合板 (A) をフローリングのほかに、天井板や壁板などの各種建材、家具材、その他の用途に広く使うことができる。

## 【0030】

## 【発明の効果】

以上のように、本発明の化粧貼り合板 (A) は紙 (23) とその全体に含浸された合成樹脂系の接着剤 (24) とから成る合成樹脂接着膜 (27) を介して、薄づき化粧単板 (22) を台板合板 (20) の表面へ、その繊維方向 (y-y) が上記紙 (23) の繊維方向 (z-z) とクロスする関係状態に貼り付け一体化してあるため、冒頭に述べた従来技術の課題を確実に改良できる効果がある。

## 【0031】

即ち、薄づき化粧単板 (22) と台板合板 (20) との上下相互間に、紙 (23) とその全体に含浸された合成樹脂系の接着剤 (24) とから成る合成樹脂接着膜 (27) が介在しており、その紙 (23) が図5の従来品として示した紙 (12) のように、中間部での原紙状態に残存しないため、使用中の経時的な温度変化に全然影響されず、その化粧単板 (22) が台板合板 (20) から層間剥離するおそれがない。その結果、耐久強度と安定性に優れた化粧貼り合板 (A) として、各種用途に使えるのである。

for the usage of various building materials, such as a crown plate and a wall board, a furniture material, and others besides a flooring.

## [0030]

## [EFFECT OF THE INVENTION]

As mentioned above, decorative veneer laminated plywood (A) of this invention It has bonded and integrated in the relationship condition that the fiber direction (y-y) carries out the cross of the thinly sliced decorative veneer (22) to the fiber direction (z-z) of above-mentioned paper (23) to the surface of a base plate plywood (20), through the synthetic resin bonding film (27) which consists of paper (23) and a synthetic resin adhesive (24) impregnated entirely. Therefore, the subject of the PRIOR ART stated to the beginning is reliably improvable.

The above-mentioned effect is expectable.

## [0031]

That is, between a thin decorative veneer (22) and a base plate plywood (20) vertically, the synthetic resin bonding film (27) which consists of paper (23) and a synthetic resin adhesive (24) impregnated entirely intervenes.

Since the paper (23) does not remain in the base paper condition in an intermediate part like paper (12) shown as a conventional product of Figure 5, It is not influenced by the time-dependent temperature change in use at all. There is no possibility that the decorative veneer (22) may carry out an interlaminar peeling from a base plate plywood (20).

As a decorative veneer laminated plywood (A) which was excellent in durable strength and a durable stability as a result, it can use for the various usage.

## 【0032】

しかも、上記合成樹脂接着膜(27)を形作る紙(23)の繊維方向(z-z)と、化粧単板(22)の繊維方向(y-y)とがクロスする関係にあり、その状態において化粧単板(22)が台板合板(20)に貼り付け一体化されているため、その化粧単板(22)の表面割れに対して上記接着膜(27)が優れた対抗強度を発揮し、化粧貼り合板(A)としての本来的な美的効果も達成できるのである。

## 【0033】

又、本発明では上記化粧貼り合板(A)の製造法として、台板合板(20)の表面に紙貼り付け用の合成樹脂系第1接着剤(24)を塗布して、その上方から紙(23)を貼り付け圧着することにより、その紙(23)の全体に上記第1接着剤(24)が含浸された合成樹脂接着膜(27)を形成した後、その合成樹脂接着膜(27)の表面に化粧単板貼り付け用の合成樹脂系第2接着剤(28)を塗布して、その上方から薄づき化粧単板(22)をその繊維方向(y-y)が上記紙(23)の繊維方向(z-z)とクロスする関係状態に貼り付け熱圧するようになっているため、台板合板(20)を搬送ラインに沿い自動間歇的に搬送する過程において、その表面に対する紙(23)の貼り付けと、引き続く化粧単板(22)の貼り付けとを短時間での効率良く行なえ、量産効果

## [0032]

And, the fiber direction (z-z) of the paper (23) which forms an above-mentioned synthetic resin bonding film (27), and the fiber direction (y-y) of a decorative veneer (22) are in the relationship which carries out a cross.

Since a decorative veneer (22) bonds on a base plate plywood (20) and is integrated in the condition, Confrontation strength excellent in the above-mentioned adhesion film (27) with respect to the surface crack of the decorative veneer (22) is demonstrated.

The original esthetic effect as a decorative veneer laminated plywood (A) can also be attained.

## [0033]

Moreover, in this invention the synthetic resin system 1st adhesive for paper sticking on (24) is applied to the surface of a base plate plywood (20) as a manufacturing method of above-mentioned decorative veneer laminated plywood (A), the press attachment of the paper (23) is bonded and carried out from the upper part. After this forms the synthetic resin bonding film (27) of the paper (23) with which the 1st above-mentioned adhesive (24) was impregnated entirely, the synthetic resin system 2nd adhesive for decorative veneer sticking on (28) is applied to the surface of the synthetic resin bonding film (27).

The fiber direction (y-y) bonds and carries out the hot pressure of the thinly sliced decorative veneer (22) to the relationship condition which carries out a cross to the fiber direction (z-z) of above-mentioned paper (23), from the upper part. Therefore, in the process that a base plate plywood (20) is conveyed automatically intermittently along with a conveyance line, Bonding the paper (23) with respect to the surface and the thing which is continued and which bonds a decorative veneer (22) can be performed efficiently in a short time.

A mass production effect can be exhibited fully.

を最大限に発揮させることができる。

**【0034】**

殊更、請求項4の構成を採用するならば、紙(23)の全体に対する第1接着剤(24)の浸透性を昂めることができ、その混然一体化した合成樹脂接着膜(27)を容易・確実に形成し得る効果がある。

**【0035】**

他方、第2接着剤(28)は上記第1接着剤(24)と同じ合成樹脂系の接着剤として、相互の親和状態に一体化しつつも、化粧単板(22)の表面から浸み出すようなおそれがなく、延いてはその化粧単板(22)の表面塗装も適正に行なえ、優れた美的効果の化粧貼り合板(A)を容易に得られることとなる。

**【図面の簡単な説明】****【図1】**

本発明に係る化粧貼り合板の分解状態を示す斜面図である。

**【図2】**

同じく化粧貼り合板の製造工程を示す説明図である。

**【図3】**

化粧貼り合板の完成状態を示す拡大断面図である。

**【図4】****[0034]**

Especially if structure of Claim 4 is adopted, It can increase the permeability of the 1st adhesive (24) of paper (23) opposed entirely.

The synthetic resin bonding film (27) which carried out integration can be formed on an easy authenticity.

The above-mentioned effect is expectable.

**[0035]**

On the other hand 2nd adhesive (28), As the 1st above-mentioned adhesive (24) and the adhesive of the same synthetic resin group Even while integrating in the mutual affinity condition, there is no possibility that it may ooze from the surface of a decorative veneer (22). As a result surface coating of the decorative veneer (22) can also be performed appropriately. Decorative veneer laminated plywood (A) of the excellent esthetic effect will be obtained easily.

**[BRIEF EXPLANATION OF DRAWINGS]****[FIGURE 1]**

It is the perspective view showing the decomposition condition of the decorative veneer laminated plywood which concerns on this invention.

**[FIGURE 2]**

It is the explanatory drawing showing the manufacturing process of a decorative veneer laminated plywood similarly.

**[FIGURE 3]**

It is the expanded sectional view showing the perfection condition of a decorative veneer laminated plywood.

**[FIGURE 4]**

従来品の製造工程を示す説明図である。

It is the explanatory drawing showing the manufacturing process of a conventional product.

**【図 5】**

従来品の完成状態を示す拡大断面図である。

**[FIGURE 5]**

It is the expanded sectional view showing the perfection condition of a conventional product.

**【図 6】**

従来品の分解状態を示す斜面図である。

**[FIGURE 6]**

It is the perspective view showing the decomposition condition of a conventional product.

**【符号の説明】**

- (20)・台板合板
- (22)・化粧単板
- (23)・紙
- (24)・第1接着剤
- (25)・紙繰り出しロール
- (26)・圧着ロール
- (27)・合成樹脂接着膜
- (28)・第2接着剤
- (29)・ホットプレス
- (x-x)・表単板の繊維方向
- (y-y)・化粧単板の繊維方向
- (z-z)・紙の繊維方向

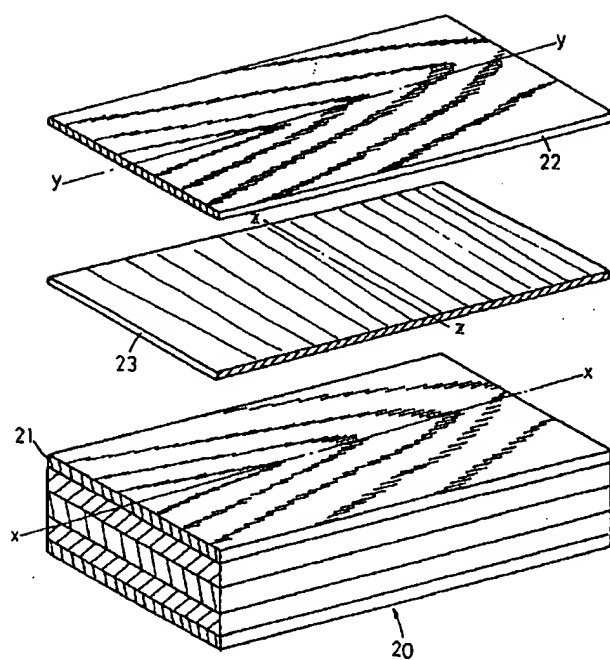
**[EXPLANATION OF DRAWING]**

- (20) base plate plywood
- (22) decorative veneer
- (23) paper
- (24) The 1st adhesive
- (25) paper delivery roll
- (26) press attachment roll
- (27) synthetic resin bonding film
- (28) The 2nd adhesive
- (29) hot press (x-x) Fiber direction of a table single plate (y-y) Fiber direction of a decorative veneer (z-z) Fiber direction of paper

**【図 1】**

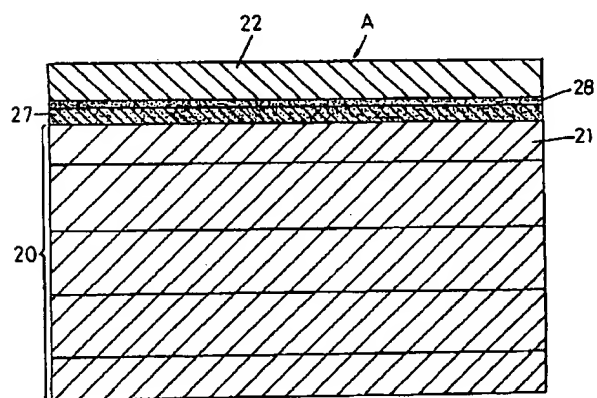
**[FIGURE 1]**





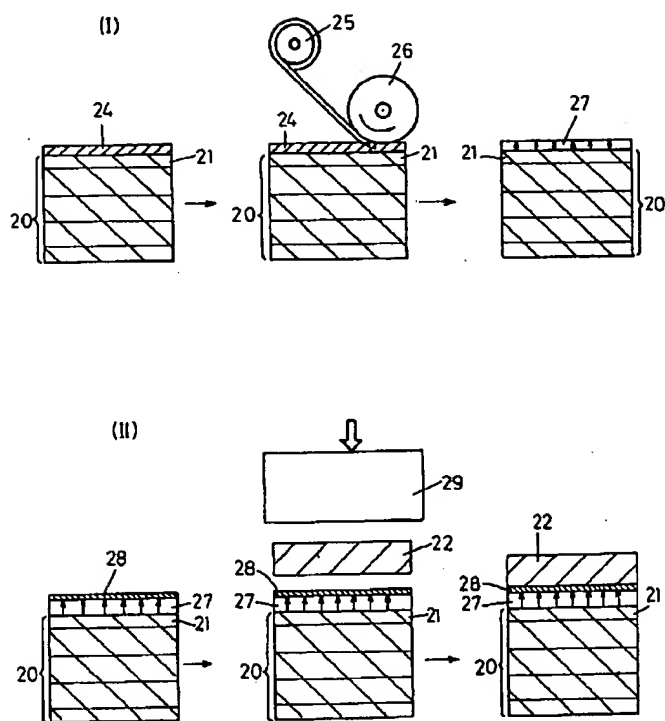
【図 3】

**[FIGURE 3]**



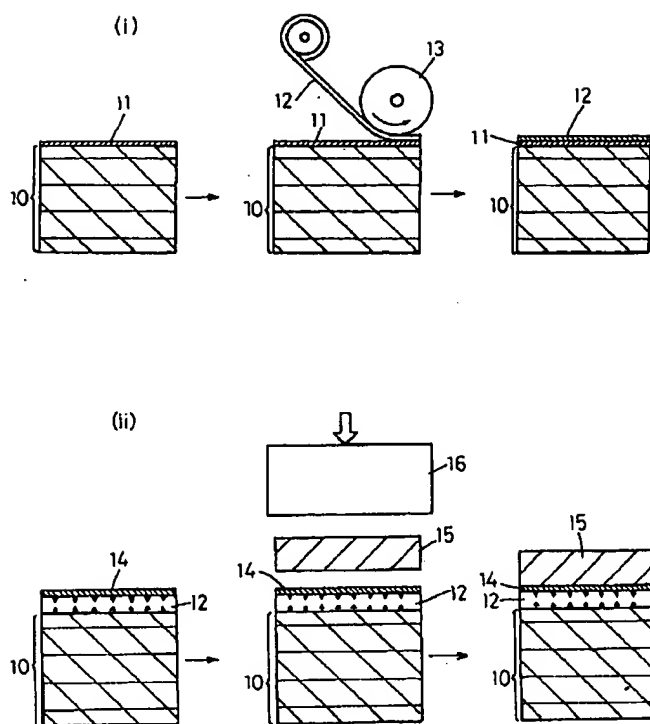
【図 2】

**[FIGURE 2]**



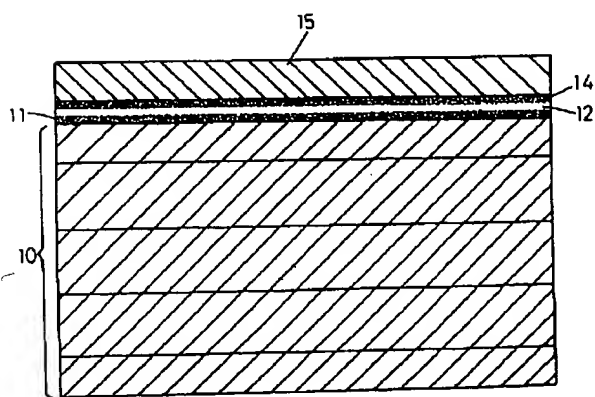
【図 4】

[FIGURE 4]



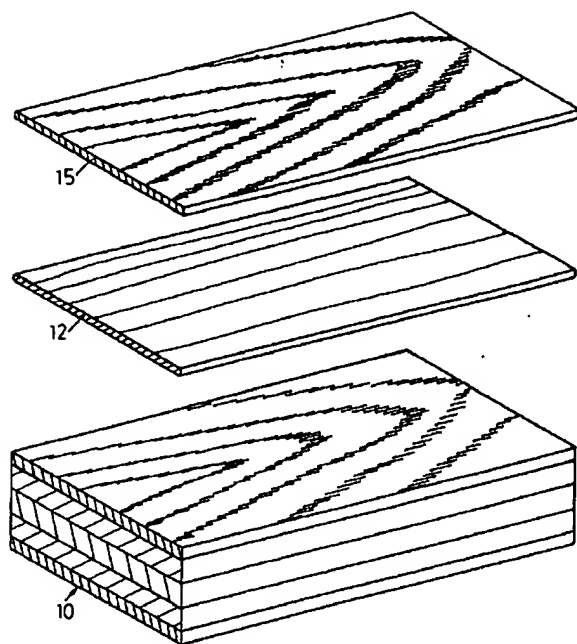
【図 5】

[FIGURE 5]



【図 6】

[FIGURE 6]



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